UI ED STATES ENVIRONMENTAL PRC CTION AGENCY
REGION II

DATE: MAY 2 7 1994

Incoming

SUBJECT: Phosphorus Standards for NYC Reservoirs

FROM: Robert Williams, Chief R. Williams
Public Water Supply Section

TO: Rick Balla
Surface Water Qualtiy Branch

NYC originally proposed creating an ambient water quality standard for phosphorus (attachment A) This standard would have been significantly more restrictive than current state requirements. **Do you consider NYC's proposal reasonable?**

DEC staff, questioned the validity of the City's technical justification for the lower standard. After extensive discussions between agency technical experts, DEP withdrew its proposal to create an ambient phosphorus standard. However, it is my understanding that restrictions on new phosphorus loadings in "phosphorus restricted" basins were maintained and DEC agreed to revise their Technical and Operational Guidance Series (TOGS) document and eventually their Water Quality Regulations for Surface and Groundwaters (6NYCRR, Part 700-705 to establish phosphorus standards more consistent with the City's own report on the Implementation of Phosphorus Leading for Water Quality in NYC Reservoirs, December 1993. **Assuming that you have a draft of the revised TOGS or can secure DEC's current thinking as what levels of phosphorus will be specified in their revised TOGS please indicate if you consider that sufficient stringent phosphorus standards will be applied in each reservoir basin?**

cc: R. Caspe, WMD

128-4.2 Phosphorus Loading to New York City Reservoirs, Lake Gleneida and Lake Gilead

The following shall apply to all reservoirs, Lake Gleneida and Lake Gilead:

(a) Concentrations of ≤.02 mg/L Total Phosphorus (TP), except for the Neversink Reservoir, for which the concentration is ≤.01 mg/L TP, have been established as levels necessary to prevent nuisance growths of algae, weeds, slimes, and associated organic by-products that are detrimental to the best use of these waters as a water supply for drinking. The loads which relate to these concentrations are set forth in Table 3 of this section.

(b) Critical phosphorus load means the phosphorus load which relates to a concentration of .02 mg/L TP, except for the Neversink Reservoir for which the concentration is ≤.01 mg/L TP.

(c) Permissible phosphorus load means the actual 1991 phosphorus load plus 50 percent of the difference between the critical phosphorus load and the actual 1991 phosphorus load.

(d) Phosphorus restricted basin means a reservoir drainage basin or controlled lake drainage basin where either:

(1) the actual 1991 phosphorus load for the reservoir or controlled lake meets or exceeds 90 percent of its critical phosphorus load; or

(2) the actual phosphorus load for the reservoir or controlled lake meets or exceeds its permissible phosphorus load.

(e) In those reservoirs or controlled lakes where the permissible phosphorus load exceeds 90 percent of the critical phosphorus load, then the 90 percent critical phosphorus load value shall be the maximum permissible phosphorus load allowed.

(f) The actual 1991 current phosphorus load, the critical phosphorus load, and the permissible phosphorus load for New York City reservoirs, Lake Gleneida and Lake Gilead are listed in Table 3 of this section.

Table 3
Phosphorus Loads ("P Load") for New York City Water Supply Reservoirs, Lake Gilead and Lake Gleneida
(gm m^{-2} yr^{-1})

Phosphorus Restricted drainage basins

Reservoir	1991 P Load	Critical P Load	90% Critical P Load	Permissible P Load
Amawalk	0.53	0.42	0.38	-
Boyds Corner	0.67	0.64	0.58	-
Cannonsville	1.49	0.84	0.76	-
New Croton	1.34	1.23	1.11	-
Croton Falls	0.75	0.62	0.56	-
Diverting	3.92	3.26	2.93	-
East Branch	1.27	1.10	0.99	-
Lake Gilead	0.15	0.12	0.11	-
Middle Branch	0.48	0.47	0.42	-
Muscoot	2.02	1.45	1.31	-

Drainage basins that are Currently Unrestricted With Respect to Phosphorus

Reservoir	1991 P Load	Critical P Load	90% Critical P Load	Permissible P Load
Ashokan	0.50	0.82	0.74	0.66
Bog Brook	0.19	0.22	0.20	0.21*
Cross River	0.26	0.31	0.28	0.29
Kensico	3.34	5.25	4.73	4.30
Lake Gleneida	0.07	0.10	0.09	0.09
Neversink	0.39	1.14	1.03	0.77
Pepacton	0.80	0.98	0.88	0.89
Rondout	2.04	3.86	3.47	2.95
Schoharie	2.13	2.82	2.54	2.48
Titicus	0.31	0.35	0.32	0.33*
West Branch	0.49	0.71	0.64	0.60

*Reservoirs in which the permissible phosphorus load has been calculated to be greater than 90 percent of the critical load, as of December 1991.

Note: Actual 1991 phosphorus loads and critical phosphorus loads for New York City water supply reservoirs, Lake Gilead and Lake Gleneida are calculated based on the methodology developed by Vollenweider (1975).